

REMARKS

This Amendment responds to the Office Action dated January 4, 2005 in which the Examiner rejected claims 1-4, 8, 11-14 and 17-18 under 35 U.S.C. §103 and objected to claims 5-7, 9-10, 15-16 and 19-20 as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

As indicated above, objected to claims 5, 9, 15 and 19 have been rewritten into independent form. Therefore, applicants respectfully request the Examiner withdraws the objection to claims 5-7, 9, 10, 15-16, 19-20.

Claims 2, 13 and 17 claim a heat dissipation device including a heat conduction path which includes a first heat conductive member and a plurality of second heat conductive members so that conduction of heat between the first heat conductive member and the actuator block is made at plural positions.

Through the structure of the claimed invention having a first heat conductive member and a plurality of second heat conducting members so that heat is conducted between the first conductive member and the actuator block at plural positions as claimed in claims 2, 13 and 17, the claimed invention provides a heat dissipating device in which no substantial amount of additional space is required in order to effectively conduct heat. The prior art does not show, teach or suggest the invention as claimed in claims 2, 13 and 17.

Claim 4 claims a heat dissipation device including first and second heat conductive members.

The second heat conductive member comprises at least one bolt having a head engaging with a part of the first heat conductive member and a shank threadably engaged with an actuator block.

Through the structure of the claimed invention having a bolt as the second heat conductive member with a head engaged with a part of a first heat conductive member and a shank threadably engaged with the actuator block, as claimed in claim 4, the claimed invention provides a heat dissipation device which requires no substantial amount of additional space in order to effectively conduct heat. The prior art does not show, teach or suggest the invention as claimed in claim 4.

As indicated above, claims 2, 4, 13 and 17 have been amended in order to make explicit what is implicit in the claims. The amendment is unrelated to a statutory requirement for patentability.

Claims 1-4, 8, 11-14 and 17-18 were rejected under 35 U.S.C. §103 as being unpatentable over *Hajicek et al* (U.S. Patent No. 6,377,462).

Hajicek et al appears to disclose a printed circuit board assembly with improved heat sinking. (col. 1, lines 6-7) A circuit assembly 10 includes a printed circuit board 12 which has a plurality of metallic, preferably copper, traces 14 formed on a surface 16 thereof. Heat generating electronic components 18 and 20 are preferably surface mounted on the board 12 so that they engage parts of the traces 14. A heat conducting metal plate 22, preferably copper plated with a solder adhering plating, is mounted on the board 12 adjacent to and spaced apart from the electronic components 18 and 20 so that the plate 22 engages a second part of the traces 14. The plate 22 has a central opening 23. A heat conducting, electrically insulating pad 24, such as a commercially available silicon pad or "sil-pad" is mounted on the plate 22 and has a central opening 25. A heat sink member 26, made of a heat absorbing and conducting metal, such as zinc, is mounted on the pad 24 so that the pad 24 is between the heat sink member 26 and the second part of

the traces 14. Heat conducting solder bridges 28 and 30 are formed between the edges of the electronic component 18 and 20 and the edges of the plate 22. The heat sink member 26 is preferably attached to the board 12 by a screw 32 which extends through a bore 34 in the board 12, through openings 23 and 25, and is threaded into a bore 36 in the member 26 and which has a head 38 which engages the plate 12. Heat sink member 26 is preferably cylindrical and includes a body 40 and a flange 42. This entire assembly is enclosed within a housing 44 which is preferably plastic, and which includes housing parts 46 and 48. (col. 1, line 55 through col. 2, line 15)

Thus, *Hajicek et al* merely discloses a single heat sink member 26 and heat conducting solder bridges 28, 30. Nothing in *Hajicek et al* shows, teaches or suggests a plurality of second heat conductive members extending from an interior environment to communicate with the environment outside the protective case, having a first end contacting the first conductive member and a second end contacting the actuator block so that conduction of heat between the first conductive member and the actuator block is made at plural positions as claimed in claims 2, 13 and 17. Rather, *Hajicek et al* merely discloses heat conducting solder bridges 28 and 30 and a single heat sink member 26.

Additionally, *Hajicek et al* merely discloses a screw 32 having a head 38 which engages printed circuit board 12 and which attaches the heat sink member 26. Nothing in *Hajicek et al* shows, teaches or suggests a second heat conductive member comprises at least one bolt having a head engaging with a part of a first heat conductive member and a shank threadably engaged with an actuator block as claimed in claim 4. Rather, *Hajicek et al* merely discloses a screw 32 which only

serves to fix the heat sink 26 to the circuit board 12 and thus the head 38 of the screw 32 does not engage the first heat conductive member (heat conductive metal plate 22) and the shank of the screw 32 does not threadably engage with the actuator block (mounting brace 54).

Since nothing in *Hajicek et al* shows, teaches or suggests a) a plurality of second heat conductive members provided so that the heat conduction between a first heat conductive member and the actuator block is made a plural locations as claimed in claims 2, 13 and 17 or b) a second heat conductive member provided as a bolt having a head engaged with part of the first heat conductive member and a shank threadably engaged with an actuator block as claimed in claim 4 (and claim 18), applicants respectfully request the Examiner withdraws the rejection to claims 2, 4, 13, 17 and 18 under 35 U.S.C. §103.

Claims 3, 8, 11, 12, 14 and 18 depend from claims 2, 3, 13 and 17 and recite additional features. Applicants respectfully submit that the claims would not have been obvious within the meaning of 35 U.S.C. §103 over *Hajicek et al* at least for the reasons as set forth above. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 3, 8, 11, 12, 14 and 18 under 35 U.S.C. §103.

The prior art of record, which is not relied upon, is acknowledged. The references taken singularly or in combination do not anticipate or make obvious the claimed invention.

Thus it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

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